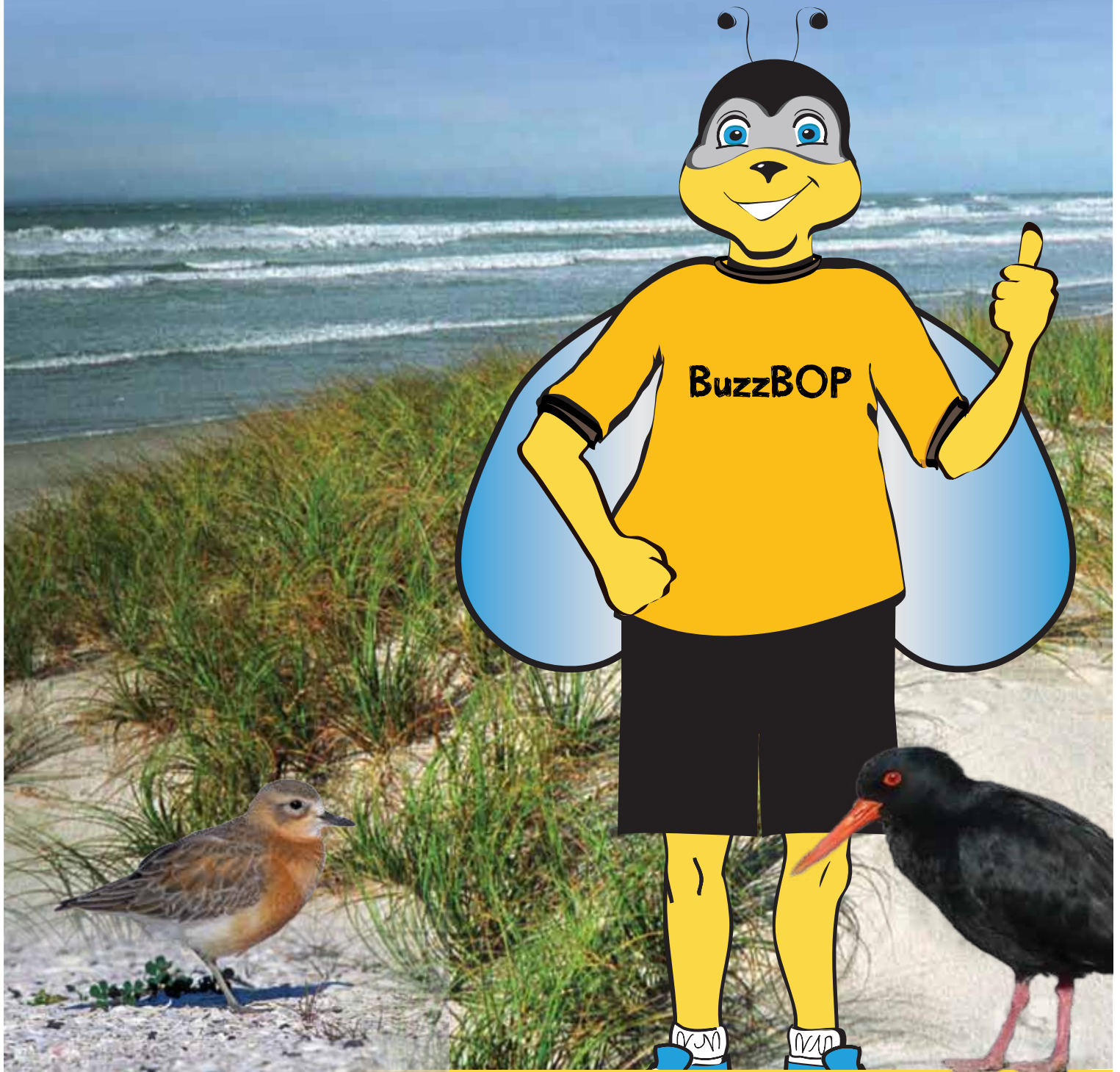




coastal activity book



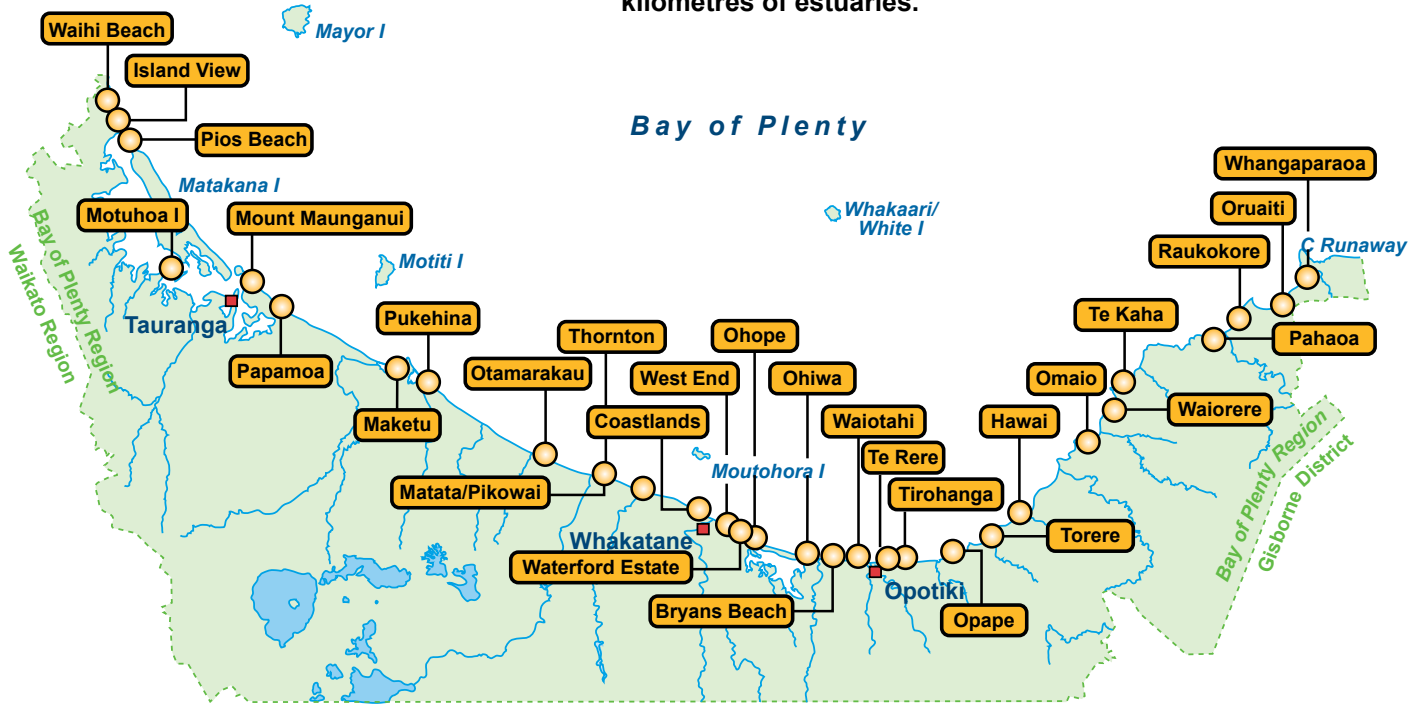
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Bay of Plenty coastline

Coast Care Bay of Plenty Groups

The total length of the coastline of the Bay of Plenty is **688 kilometres**. That's about the distance from Auckland to Wellington! This is made up of **259 kilometres of open coast** and **369 kilometres of estuaries**.



The coastline of the Bay of Plenty is very important. It's a great place for us to play and have fun and visitors to the area (sometimes from all over the world) also come to enjoy our beaches and coast.

Activity Unscramble the place names below to find out some of the most popular tourist spots.

A) iaWhi Becah

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B) aarTangu

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C) taManaka asdInl

--	--	--	--	--	--	--	--	--	--

D) oOpeh

--	--	--	--	--	--

E) eT aKha

--	--	--	--	--	--

F) aomPaap haceB

--	--	--	--	--	--	--	--	--	--

G) unMto anauuMgni

--	--	--	--	--	--	--	--	--	--	--	--

H) naeahWak

--	--	--	--	--	--	--	--	--	--	--

I) aWiahu yBa

--	--	--	--	--	--	--	--	--	--	--

The issues!

Whenever we go to the beach we think of sun, sand, surf and fun! If there was no beach it would be very sad indeed. Sand dunes are a really important part of the beach because:

- Sand dunes are the sand reserve for our beach.
- Sand dunes provide protection to our houses and land during storms. Have you ever been to the beach during a storm? Did you notice how the waves pound hard against the dunes? If the dunes weren't there the sea would flood inland and into houses and shops during storms.
- Lots of native plants and animals live in the dunes.

Although the dunes naturally erode and rebuild, lots of people can cause permanent damage by using the beach and the dunes in the wrong way.



Erosion

When the tiny pieces (particles) of sand are moved by wind and water it is called **erosion**.

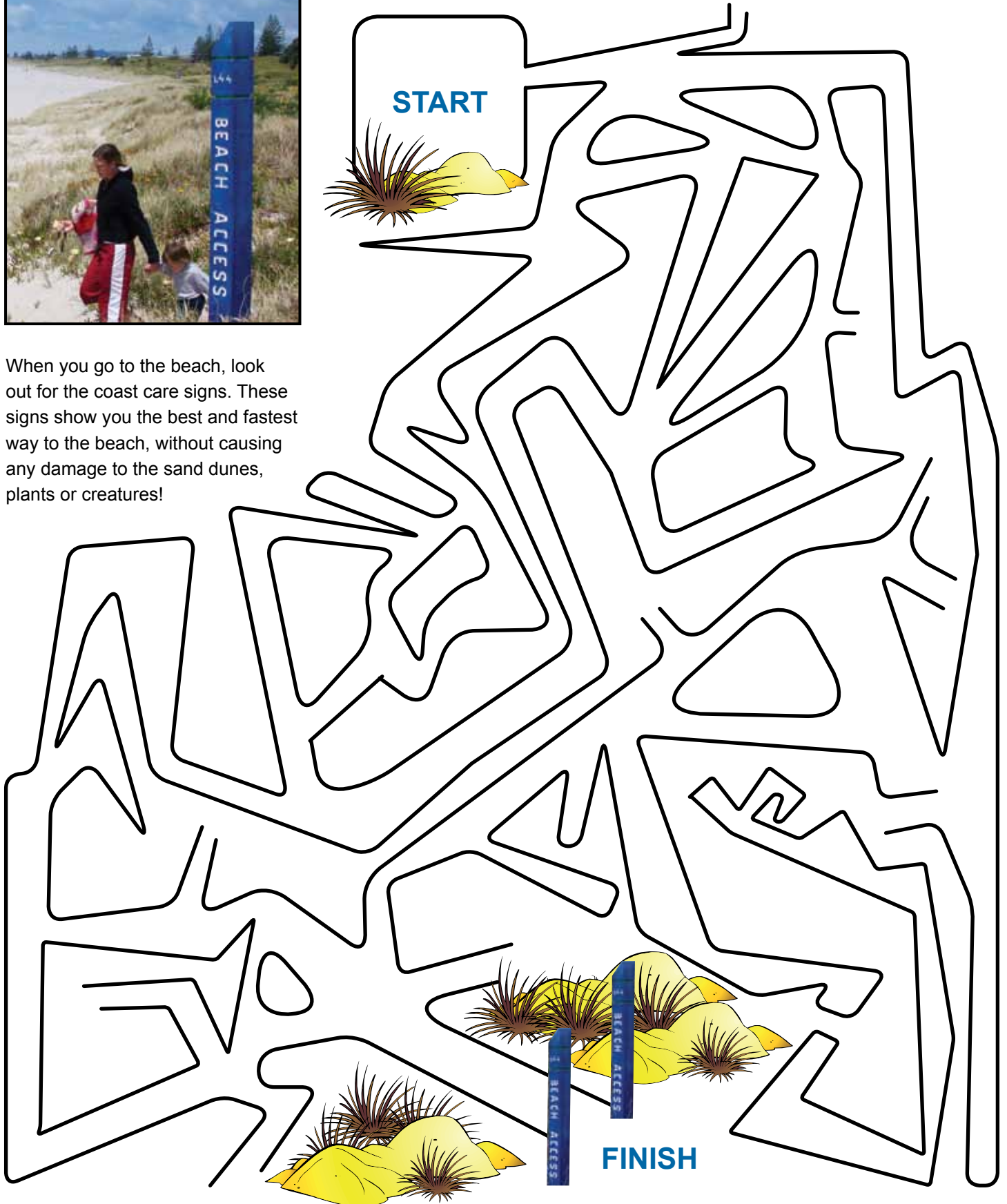


Activity Circle the things that are wrong, or that could be improved in this cartoon.

Coast Care signs



Activity Find the right way through the dunes to the beach!



When you go to the beach, look out for the coast care signs. These signs show you the best and fastest way to the beach, without causing any damage to the sand dunes, plants or creatures!

Surf the waves, not the dunes



Sandboarding on the dunes kills the plants and loosens the sand. Wind erosion of the sand dunes can then happen. This is an activity to do with sand dune erosion. It could get a bit messy so to keep on the good side of mum BuzzBOP says you might want to do it outside!



Activity

You will need:

4 cups of sand, tops from copier paper boxes, blue food colouring, red food colouring, something that makes wind (e.g. blow out your mouth, bike pump)

What to do:

1. Mix together 1 cup of sand with 7 drops of blue food colouring. Then mix another cup of sand with 7 drops of red food colouring. Make sure the sand is completely dry before using it. You will now have 1 cup of blue sand, 1 cup of red sand and 2 cups of uncoloured sand.
2. Put the copier paper box top upside down on a flat surface.
3. At one end of the box top cut or tear 2 corners. Push the loose piece down flat. The other 3 sides of the box should remain standing.
4. Make a "dune" by pouring the red sand in a straight line across the open end of the box top. The dune should be about 8 cm wide and 2 cm deep.
5. Using the blue sand, make another dune of the same size behind the red one.
6. Using the uncoloured sand, make 2 more dunes, each the same size as the previous ones, behind the blue one.
7. Think about what will happen to the sand if there is a wind blowing directly into the dunes?
8. Using the bike pump, blow wind directly into the dunes. Start with a fairly low wind speed and then increase it. Continue until about half the red sand has been eroded. Notice what happens to the dune and the particles of sand at different wind speeds.
9. Where does the red and blue sand end up? Is there any difference between the red and blue sand?
10. Try blowing wind from different directions and see what happens.
11. Spray the dunes with water and then blow wind across them. What happens?
12. Try adding 'plants' (cotton wool held down by toothpicks) to the dunes. Do the 'plants' make a difference when you blow wind across the dunes?

FINISH

64 Spend the afternoon sandboarding – move back 3 spaces

63

61 Take your rubbish home – move forward 1 space

62

41

43

46

40

42 Join a Coast Care caregroup – move forward 4 spaces

44

45

39 Chase the birds on the beach – move back 2 spaces

38

31 Go to the beach watch a tsunami – move back 5 spaces

37



32

30

36

33 Catch a rabbit – move forward 4 spaces

35

34

8

9

7 Tell others about protecting the dunes – move forward 1 space

1 Learn about dune plants – move forward 2 spaces

6

START

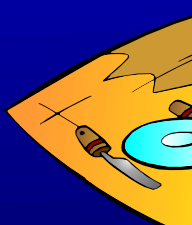
2

5

3

4

Tom's Beach Game





56 Build a house on the dunes – move back 4 spaces

55

57 Use the beach access paths – move forward 2 spaces

54

53 Help remove pest plants – move forward 2 spaces

52

48 Let your unwanted cat loose in the dunes – move back 5 spaces

49

47

51

50



22

23 Clean up your dogs mess – move forward 3 spaces

21

20 Drive over the dunes – move back 3 spaces

28

24

27 Leave the beach as you found it – move forward 2 spaces

19

26

25

18

0 Keep to the paths – move forward 2 spaces

17

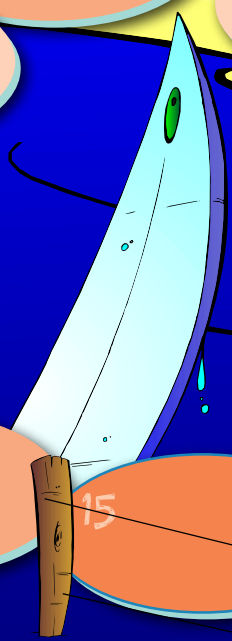
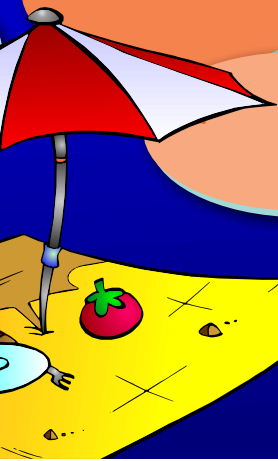
13 Leave your rubbish on the beach – move back 2 spaces

14

16 Keep out of fenced areas – move forward 2 spaces

15

11



Keep vehicles off the dunes



There are lots of important plants and creatures that live in the sand dunes. Vehicles like motorbikes and four wheel drive cars can kill them. And if there are no plants to keep the sand together, erosion can happen.

Who lives in the dunes?

When you first look at the dunes it may look pretty lifeless. But take another look, you might be surprised to see who actually lives there.



Activity Read the descriptions of some creatures that live in our sand dunes. When you've finished, match the descriptions to the pictures on the right by writing their letter in the blank boxes below.

Copper skink

The smallest skink in New Zealand and only found in the North Island. It grows to about 10 cm long and is glossy and coppery in colour. Eats small insects and spiders that live in the dunes.

Katipo spider

This spider is only found in New Zealand (endemic). It is black with a red stripe down its back. Although it is poisonous it will only bite if it is stood on or annoyed. Katipo spiders are now very rare.

Sand scarab beetle

The sand scarab beetle lives in a hole under driftwood or in the roots of the dune plants. It hides out in its hole during the day and comes out to feed at night. It is shiny black or brown and around 20 mm long.

Copper butterfly

This native butterfly has orange and brown wings and only lives for 10 days. It feeds and lays its eggs on the muehlenbeckia (pohuehue) plant.

Variable oystercatcher

The Maori name for the oystercatcher is torea. It is black with a long red beak and red eyes and loves to eat shellfish.

New Zealand dotterel

This bird is endemic to New Zealand and there are less than 1,500 left in the world. The Maori name for the dotterel is tuturiwhatu pukunui. To help protect them from bigger birds, the eggs and the chicks are the same colour as the sand and are very hard to see.



Answers: A) Copper butterfly, B) Variable oystercatcher, C) NZ dotterel, D) Katipo spider, E) Sand scarab beetle, F) Copper skink


Look after the plants

Activity Draw the pictures in the gaps to finish the story. The words and pictures are given at the bottom.


The Story of Pingao

At the beginning of there was a big argument between Tane, the God of the and his brother Tangaroa, the God of the sea. Tangaroa was with Tane because Tane had used his great strength to separate Ranginui, the sky father from Papatuanuku the mother. Tane wanted to end the argument with Tangaroa and as a sign of peace he plucked out his eyebrows and gave them to Tangaroa. But Tangaroa was too with Tane to forgive him and he threw the eyebrows from the . They landed on the and they can still be found growing today as , at the boundary between the


and the




Earth




Sea




Time




Beach



Pingao



Angry



Forest

Answers: time, forest, angry, Earth, angry, forest, pingao, beach, pingao, forest, sea

Feet kill plants! Plants on the sand dunes are very important. They are called 'sandbinders' because they hold the sand together and stop the dunes from disappearing. They do this by trapping the wind blown sand with their leaves and their roots.





Look after the dunes

Sandy beaches are great places to have fun. By following the five key messages on the previous pages you can help to look after the dunes so we can keep our fantastic beaches for years to come.

The five key messages are:

1. Look for the Coast Care signs
2. Respect the fences
3. Surf the waves not the dunes
4. Keep vehicles off the dunes
5. Look after the plants



Activity Help BuzzBOP find these words in our Coast Care wordfind.

- | | |
|---------------|--------------|
| beach | pingao |
| butterfly | sand |
| coastcare | sandboarding |
| dotterel | sea |
| dunes | signs |
| erosion | skink |
| fences | spinifex |
| katipo | tangaroa |
| oystercatcher | wind |

K X O O F S P R U E E P X Z E O
 E Q D S R Z E E L H V O E G E T
 R R A U R O S H R G F N I H H E
 L P D A N O E C T A N G A R O A
 O T L E R E T T O D C S A C F S
 H F E N C E S A E S L T K D P L
 E E C C A E R C T L H D S I I R
 I L R G N I D R A O B D N A S L
 E L Q U S I B E K A T I P O O O
 I Y L F R E T T U B F V I K K C
 S A N D A M G S E E R W N U T R
 M F Z C E S R Y X L H I G R E T
 S H H N O I S O R E K N A E J L
 E S T F N G R U Z S E D O E I L
 C N M P N N E M M T I S E E N C
 A D T K G S B G B E C E G E O M



Special dune plants

Native dune plants are really cool! They can survive storms, salt spray from the sea, having little water and being buried by sand! But they don't like being stood on, eaten or driven over. The two most important native plants are Spinifex and Pingao. BuzzBOP is going to tell you a bit more about these very special plants.



Golden sand sedge/Pingao

Pingao is a native sand binding plant and helps build dunes. Wind blown sand gets trapped in its leaves and piles up in a heap around the plant. Its leaves are rich green-bronze colour and are on long, thick rope-like stems that trail across the dune. Maori weavers like to use Pingao to weave kete because when dried it turns into a bright golden yellow fibre.



Spinifex/Kowhangatara

Spinifex is a native plant and is common on the sand dunes around New Zealand. It's a silvery green colour with leafy creeping runners that run down or across the dunes. It has a spiky ball seed head that tumbles along the beach until it gets stuck and releases its seeds. It grows at the front of the dune and helps to build up the dune front.



Do you want to be a Pollution Buster?



Join up on the form below and you will get four newsletters a year, packed full of fun activities and information about our environment.

Pollution Busters join up here...

Please have an adult check that the details are correct before this is sent.

- I am a new Pollution Buster
- I am already a Pollution Buster but I have changed my address

Name _____

School _____ Birthday ____ / ____ / ____ day / month / year

Address _____
_____ (Postcode) _____



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This activity book was adapted from
Pollution Busters Club Newsletter 29,
December 2006

You can view the original newsletter at
www.boprc.govt.nz

Find out more

If you want more information on Coast Care groups and programmes contact:

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Bay of Plenty Regional Council in partnership with
Tauranga City Council; Whakatāne, Western Bay of Plenty, and
Ōpōtiki District Councils; and the Department of Conservation.